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RAW SEQUENCE LISTING DATE: 04/24/2001 PATENT APPLICATION: US/09/749,273 TIME: 11:11:30

Input Set : N:\Crf3\RULE60\09749273.txt
Output Set: N:\CRF3\04242001\I749273.raw

ENTERED SEQUENCE LISTING 4 (1) GENERAL INFORMATION: (i) APPLICANT: Korenberg, Julie R. 7 Yamakawa, Kazuhiro (ii) TITLE OF INVENTION: A NOVEL CHROMOSOME 21 GENE MARKER, 9 COMPOSITIONS AND METHODS USING SAME 10 (iii) NUMBER OF SEQUENCES: 3 12 (iv) CORRESPONDENCE ADDRESS: 14 15 (A) ADDRESSEE: CAMPBELL & FLORES, LLP (B) STREET: 4370 La Jolla Village Drive, Suite 700 16 17 (C) CITY: San Diego 18 (D) STATE: California 19 (E) COUNTRY: United States 20 (F) ZIP: 91212 22 (v) COMPUTER READABLE FORM: 23 (A) MEDIUM TYPE: Floppy disk 24 (B) COMPUTER: IBM PC compatible 25 (C) OPERATING SYSTEM: PC-DOS/MS-DOS 26 (D) SOFTWARE: PatentIn Release #1.0, Version #1.25 28 (vi) CURRENT APPLICATION DATA: C--> 29 (A) APPLICATION NUMBER: US/09/749,273 C--> 30 (B) FILING DATE: 26-Dec-2000 31 (C) CLASSIFICATION: 33 (vii) PRIOR APPLICATION DATA: (A) APPLICATION NUMBER: 09/048,887 34 35 (B) FILING DATE: 38 (viii) ATTORNEY/AGENT INFORMATION: 39 (A) NAME: Campbell, Cathryn A. 40 (B) REGISTRATION NUMBER: 31,815 41 (C) REFERENCE/DOCKET NUMBER: P-CE 2573 43 (ix) TELECOMMUNICATION INFORMATION: 44 (A) TELEPHONE: (619)535-9001 45 (B) TELEFAX: (619)535-8949 (2) INFORMATION FOR SEQ ID NO: 1: 50 (i) SEQUENCE CHARACTERISTICS: 51 (A) LENGTH: 5141 base pairs 52 (B) TYPE: nucleic acid 53 (C) STRANDEDNESS: double 54 (D) TOPOLOGY: linear 56 (ii) MOLECULE TYPE: cDNA 59 (vii) IMMEDIATE SOURCE: 60 (A) LIBRARY: TRISOMY 21 FETAL BRAIN CDNA LIBRARY 61 (B) CLONE: EHOC-1

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(viii) POSITION IN GENOME:

(A) NAME/KEY: CDS

(ix) FEATURE:

(A) CHROMOSOME/SEGMENT: 21q22.3

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Input Set : N:\Crf3\RULE60\09749273.txt
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68			•	•	CATI						_							
71			-	_	CE DE													
																CGGGCG		60
																CCATG		120
	GGGC	GCGG	igg (GCCC	GGCC	G GI	GACG	CCGG	ACC	GCCC								174
78											Met	Asp	Ala	Ser	Glu	Glu		
79											1				5			
81	CCG	CTG	CCG	CCG	GTG	ATC	TAC	ACC	ATG	GAG	AAC	AAG	CCC	ATC	GTC	ACC		222
82	Pro	Leu	Pro	Pro	Val	Ile	Tyr	Thr	Met	Glu	Asn	Lys	Pro	Ile	Val	Thr		
. 83				10					15					20				
85	TGT	GCT	GGA	GAT	CAG	AAT	TTA	TTT	ACC	TCT	GTT	TAT	CCA	ACG	CTC	TCT		270
86	Cys	Ala	Gly	Asp	Gln	Asn	Leu	Phe	Thr	Ser	Val	Tyr	Pro	Thr	Leu	Ser		
87			25					30					35					
89	CAG	CAG	CTT	CCA	AGA	GAA	CCA	ATG	GAA	TGG	AGA	AGG	TCC	TAT	GGC	CGG		318
90	Gln	Gln	Leu	Pro	Arg	Glu	Pro	Met	Glu	Trp	Arg	Arg	Ser	Tyr	Gly	Arg		
91		40					45					50						
93	GCT	CCG	AAG	ATG	ATT	CAC	CTA	GAG	TCT	AAC	TTT	GTT	CAA	TTC	AAA	GAG		366
94	Ala	Pro	Lys	Met	Ile	His	Leu	Glu	Ser	Asn	Phe	Val	Gln	Phe	Lys	Glu		
95	55		_			60					65				-	70		
97	GAG	CTG	CTG	CCC	AAA	GAA	GGA	AAC	AAA	GCT	CTG	CTC	ACG	TTT	CCC	TTC		414
					Lys													
99					75		-		-	80					85			
	CTC	CAT	ATT	TAC	TGG	ACA	GAG	TGC	TGT		ACC	GAA	GTG	TAT		GCT		462
																Ala		
103				90	_			1 -	95	_				100	_			
105	ACA	GTA	ΑΑΑ			СТС	ACC	AAG			: ААТ	GTT	СТО			CAT		510
																His		
107			105	-	LIDP			110	_				115	_				
		ጥርጥ			TGG	TTA	АТА			СТТ	GAA	ААТ			. AAC	AAA		558
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111		120					125			, , , , ,	010	130	_					•
			ΔΔΔ	. ∆CC	י אאר	` አ ጥሮ			CGA	ACC	ייירייי			GAC	מממי	ATA		606
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			СΔТ	րարդ	пст			CAG	. дст	· GAC			Стт	GTG	י כיייכ	TCC		654
																Ser	-	034
119	-	HJII	nsp		155		Lys	0111	OCI	160	-	Cys	, , ,	, vui	165			
		CCC	ጥጥር	ממג			ጥርጥ	CGA	ΔСТ			ጥርር	TGG	דעע		TTC		702
																Phe		702
123	_	FIO	пец	170	_	361	361	AI 9	175		GIU	Jer	111	180		FILE		
		N.C.C	222			አሮአ	mmc	CTT			ጥረጥ	արա	N.C.C			CTA		750
																Leu		750
127	ьeu	1111	185		Ary	1111	Leu			Met	ser	FIIE	195	_	ASII	Leu		
	ccc	አአሮ	-			CAC	አመረ	190			700	CAC			л	CAC		798
																GAG		130
	_	-	rne	GIU	Asp	мыр		_	1111	ьeu	Arg		_	Arg	Inr	Glu		
131		200	maa	3.00		mar	205		mma	3.00	Cmm	210		030	Omm.	CCC		046
																GCC		846
		стА	тrр	ser	Pne	_		туr	ьиe	met			ĢΙU	GIU	ьeu	Ala		
T 2 2	215					220					225					230		





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															CAG		894
138	Phe	Val	Phe	Glu		Leu	Gln	Gln	Phe		Asp	Ala	Leu	Val		Tyr.	
139					235					240					245		
															GGG		942
142	Asp	Glu	Leu	Asp	Ala	Leu	Phe	Ser		Tyr	Val	Val	Asn		Gly	Ala	
143				250					255					260			
															AAG		990
146	Gly	Asp	Gly	Ala	Asn	Trp	Leu		Phe	Phe	Cys	Gln		Val	Lys	Ser	
147			265		•			270					275				
															CGG		1038
150	Trp	Asn	Gly	Leu	Ile	Leu		Lys	Pro	Ile	Asp		Glu	Lys	Arg	Glu	
151		280					285					290					
															TAC		1086
154	Ser	Ile	Gln	Arg	Arg	Glu	Ala	Thr	Leu	Leu		Leu	Arg	Ser	\mathtt{Tyr}		
	295					300					305					310	
															TGG		1134
158	Phe	Ser	Arg	Gln	Cys	Thr	Leu	Leu	Leu	Phe	Leu	Gln	Arg	Pro	Trp	Glu	
159					315					320					325		
															GAA		1182
162	Val	Ala	Gln	Arg	Ala	Leu	Glu	Leu	Leu	His	Asn	Cys	Val	Gln	Glu	Leu	
163				330					335					340			
165	AAG	ÇTC	TTA	GAA	GTC	TCT	GTC.	CCA	CCT	GGT	GCT	CTG	GAC	TGC	TGG	GTG	1230
166	Lys	Leu	Leu	Gļu	Val	Ser	Val	Pro	Pro	Gly	Ala	Leu	Asp	Cys	${\tt Trp}$	Val	
167			345					350					355				
															TGT		1278
170	Phe	Leu	Ser	Cys	Leu	Glu	Val	Leu	Gln	Arg	Ile	Glu	Gly	Cys	Cys	Asp	
171		360					365					370					
															TGG		1326
174	Arg	Ala	Gln	Ile	Asp	Ser	Asn	Ile	Ala	His	Thr	Val	Gly	Leu	\mathtt{Trp}	Ser	
	375					380					385					390	
177	TAT	GCC	ACA	GAA	AAG	TTA	AAG	TCC	TTG	GGC	TAT	CTA	TGT	GGA	CTT	GTG	1374
178	Tyr	Ala	Thr	Glu	Lys	Leu	Lys	Ser	Leu	Gly	Tyr	Leu	Cys	Gly	Leu	Val	•
179					395					400					405		
181	TCA	GAG	AAA	GGA	CCT	AAC	TCA	GAA	GAT	CTC	AAC	AGG	ACA	GTT	GAC	CTT	1,422
182	Ser	Glu	Lys	Gly	Pro	Asn	Ser	Glu	Asp	Leu	Asn	Arg	Thr	Val	Asp	Leu	
183				410					415					420			
															GCT		1470
186	Leu	Ala	Gly	Leu	Gly	Ala	Glu	Arg	Pro	Glu	Thr	Ala	Asn	Thr	Ala	Gln	
187			425					430					435				
															GCT		1518
190	Ser	Pro	Tyr	Lys	Lys	Leu	Lys	Glu	Ala	Leu	Ser	Ser	Val	Glu	Ala	Phe	
191		440					445					450					
193	GAA	AAA	CAC	TAC	TTA	GAT	TTG	TCC	CAT	GCC	ACC	ATT	GAA	ATG	TAT	ACA	1566
194	Glu	Lys	His	Tyr	Leu	Asp	Leu	Ser	His	Ala	Thr	Ile	Glu	Met	Tyr	Thr	
195						460					465					470	
															CTG		1614
198	Ser	Ile	Gly	Arg	Ile	Arg	Ser	Ala	Lys	Phe	Val	Gly	Lys	Asp	Leu	Ala	
199					475					480					485		
201	GAG	TTT	TAC	ATG	AGG	AAA	AAG	GCT	CCA	CAA	AAG	GCA	GAA	ATC	TAT	CTT	1662





Input Set : N:\Crf3\RULE60\09749273.txt
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202 203	Glu	Phe	Tyr	Met 490	Arg	Lys	Lys	Ala	Pro 495	Gln	Lys	Ala	Glu	Ile 500	Tyr	Leu	
	CAA	GGA	GCA		ΑΑΑ	AAC	TAC	CTG		GAG	GGC	TGG	GCA	CTC	CCC	ATC	1710
														Leu			_,_,
207		1	505		-1-		-1-	510			2		515				
	ACA	CAC	ACA	AGG	AAG	CAG	CTG	GCC	GAA	TGT	CAA	AAG	CAC	CTT	GGA	CAA	1758
210	Thr	His	Thr	Arg	Lys	Gln	Leu	Ala	Glu	Cys	Gln	Lys	His	Leu	Gly	Gln	
211		520					525					530					
														GAC			1806
		Glu	Asn	Tyr	Leu		Thr	Ser	Ser	Leu		Ala	Ser	Asp	His		
	535					540					545					550	
														CTT			1854
	Leu	rnr	GIU	GIU	555	Arg	гÀг	HIS	Pne	560	GIII	GIU	rre	Leu	565	Pne	
219	ccc	λCC	CAG	CCC		CAC	ACC	CCA	CCT		ΔAG	ΔͲΔ	GTG	CTA		ΔΤС	1902
														Leu			1002
223	****	001	01	570	001		501	110	575		_,_	220	,	580			
	CAT	TCC	TTT		CAA	CTG	CGA	GAT	CTC	CAT	TTT	GAT	CCC	TCC	AAT	GCC	1950
														Ser			
227			585					590					595				
														ATG			1998
230	Val	Val	His	Val	Gly	Gly		Leu	Cys	Val	Glu		Thr	Met	Tyr	Ser	
231		600					605					610					
														AAT			2046
		Met	Pro	Val	Pro		His	Val	Glu	GIn		Val	Val	Asn	Val		•
	615	3.00	y mm	CAC	***	620	N.C.C	ma C	CCC	አአሮ	625	CCC	CAC	TGG	Cmm	630 ACC	2094
														Trp			2034
239	FIIC	261	116	Giu	635	ASII	Ser	TYT	пта	640	1111	ALG	GIU	пр	645	1111	
	AAG	CAC	AAG	ACG		ААТ	GGG	ATC	ATT		TTT	CCA	CCC	GAG		GCA	2142
														Glu			
243	-		-	650			-		655					660			
245	CCT	TTC	CCT	GTA	TCC	CAA	AAC	AGT	\mathtt{TTG}	CCC	GCG	CTG	GAG	TTG	TAT	GAA	2190
246	${\tt Pro}$	Phe	Pro	Val	Ser	Gln	Asn		Leu	Pro	Ala			Leu	Tyr	Glu	
247			665					670					675				
														ACT			2238
	Met		GLu	Arg	Ser	Pro		Asp	Asn	Ser	Leu		Thr	Thr	GTĀ	lie	
251	a m.c	680	202	220	CMC	CAC	685	CmC	CITIC	3 C 3	A C C	690	CAC	AGC	NCC	TCC	2286
														Ser			2200
255		Cys	пту	ASII	Val	700	rie c	цси	пси	ni 9	705	0111	Oru	JCI	DCI	710	
		СТА	GAG	ATG	CCC		GGG	GTG	GCT	CTG		GAG	GGT	GCC	CAC		2334
														Ala			
259					715		-			720	•		-		725	,	
261	CTG	AGG	TGC	AGC	CAC	GTG	ACC	CTG	GAA	CCA	GGG	GCC	AAC	CAG	ATA	ACA	2382
262	Leu	Arg	Cys	Ser	His	Val	Thr	Leu	Glu	Pro	Gly	Ala	Asn	Gln	Ile	Thr	*
263				730					735					740			
														AGG			2430
266	Phe	Arg	Thr	Gln	Ala	Lys	Glu	Pro	Gly	Thr	Tyr	Thr	Leu	Arg	Gln	Leu	





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		,															
267			745					750					755				
269	TGC	GCC	TCG	GTG	GGC	TCC	GTG	TGG	TTC	GTC	CTC	CCT	CAC	ATC	TAC	CCC	2478
270	Cys	Ala	Ser	Val	Gly	Ser	Val	Trp	Phe	Val	Leu	Pro	His	Ile	Tyr	Pro	
271		760					765					770					
273	ATT	GTG	CAG	TAC	GAC	GTG	TAC	TCA	CAG	GAG	CCC	CAG	CTG	CAC	GTG	GAG	2526
274	Ile	Val	Gln	Tyr	Asp	Val	Tyr	Ser	Gln	Glu	Pro	Gln	Leu	His	Val	Glu	
275	775					780					785					790	
277	CCG	CTG	GCT	GAT	AGC	CTT	CTG	GCA	GGC	ATT	CCT	CAG	AGA	GTC	AAG	TTC	2574
278	Pro	Leu	Ala	Asp	Ser	Leu	Leu	Ala	Gly	Ile	Pro	Gln	Arg	Val	Lys	Phe	
279					795					800					805		
281	ACT	GTC	ACT	ACC	GGC	CAT	GAT	ACG	ATA	AAG	AAT	GGA	GAC	AGC	CTG	CAG	2622
282	Thr	Val	Thr	Thr	Gly	His	Asp	Thr	Ile	Lys	Asn	Gly	Asp	Ser,	Leu	Gln	
283				810					815					820			
285	CTT	AGC	AAT	GCC	GAA	·GCC	ATG	CTC	ATC	CTG	TGC	CAG	GCG	GAG	AGC	AGG	2670
286	Leu	Ser	Asn	Ala	Glu	Ala	Met	Leu	Ile	Leu	Cys	Gln	Ala	Glu	Ser	Arg .	
287			825					830					835				
289	GCT	GTG	GTC	TAC	TCC	AAC	ACG	AGA	GAA	CAG	TCT	TCT	GAG	GCC	GCG	CTC	2718
290	Ala	Val	Val	Tyr	Ser	Asn	Thr	Arg	Glu	Gln	Ser	Ser	Glu	Ala	Ala	Leu	
291		840					845					850					
293	CGG	ATT	CAG	TCC	TCC	GAC	AAG	GTC	ACG	AGC	ATC	AGT	CTG	CCT	GTT	GCG	2766
294	Arg	Ile	Gln	Ser	Ser	Asp	Lys	Val	Thr	Ser	Ile	Ser	Leu	Pro	Val	Ala	
295	855					860					865					870	
297	CCT	GCG	TAC	CAC	GTG	ATC	GAA	TTT	GAA	CTG	GAA	GTT	CTC	TCT	TTA	CCT	2814
298	Pro	Ala	Tyr	His	Val	Ile	Glu	Phe	Glu	Leu	Glu	Val	Leu	Ser	Leu	Pro	
299					875					880					885		
301	TCA	GCC	CCA	GCA	CTC	GGA	GGG	GAG	AGT	GAC	ATG	CTG	GGG	ATG	GCA	GAG	2862
302	Ser	Ala	Pro	Ala	Leu	Gly	Gly	Glu	Ser	Asp	Met	Leu	Gly	Met	Ala	Glu	
303				890					895					900			
												GGC					2910
	Pro	His		Lys	His	Lys	Asp	Lys	Gln	Arg	Thr	Gly		Cys	Met	Val	
307			905					910					915				
												TGG					2958
	Thr		Asp	His	Lys	Val		Ile	Asp	Cys	Pro	Trp	Ser	Ile	Tyr	Ser	
311		920					925					930					
												AGG					3006
		Val	Ile	Ala	Leu		Phe	Ser	Val	Pro		Arg	Thr	Thr	His		
	935					940					945					950	
												GTT					3054
	Leu	Leu	Ser	Ser	_	Thr	Arg	Lys	Tyr		GIn	Val	Cys	Val		Asn	
319					955					960					965		
												TAT					3102
	Leu	Ser	GLu		Asp	Pne	GIn	Leu		Asp	Ser	Tyr	Leu		Asp	Thr	
323	000	a		970	a. a	CTC.	~	am 3	975		ama			980		a. a	2150
												AAC					3150
	GTÄ	Asp		Inr	Asp	ьeu	GIN		vaı	Pro	ьeu	Asn		GIN	ser	GIN	
327	~~	000	985	ma	100	220	a	990	OTT C	mma	mma	OTC C	995	C 3 3	OT C		2100
												GTC					3198
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331		1000	'				1005	,				1010	'				•





VERIFICATION SUMMARY DATE: 04/24/2001 PATENT APPLICATION: US/09/749,273 TIME: 11:11:31

Input Set : N:\Crf3\RULE60\09749273.txt
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L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]